

CLAIMS

1. A barrier used during testing of a water line including an upstream pipe and a downstream pipe, said barrier comprising
 - a cylindrical wall, and
 - a selectively removable planar disk disposed within the wall member substantially at a right angle to the cylindrical wall,
 - said planar disk forming within the wall member on opposite sides of said planar disk a first section sized to receive the upstream pipe and a second section sized to receive the downstream pipe,
 - said planar disk having attached thereto a piercing assembly including
 - a piercing member having a pointed end, said piercing member mounted to planar disk to be pulled towards the planar disk to pierce said planar disk, and
 - a pull line connected to the piercing assembly to enable a user while the barrier is installed in a water line to pull the piercing member towards the planar disk and pierce said planar disk.
2. The barrier of Claim 1 where the planar disk includes a score line.
3. The barrier of Claim 2 where the pointed end of the piercing member resides along the score line.
4. The barrier of Claim 2 where the score line emanates helically from a position proximate the geometric center of the planar disk.
5. The barrier of Claim 2 where the score line substantially traverses the circumference of the disk.
6. The barrier of Claim 1 where the piercing member is on one side of the planar disk and a pull member is on the other side of the planar disk, said pull line being connected to the pull member.

1 7. The barrier of Claim 6 where the piercing member has a flat portion residing
2 on said one side of the planar disk and a cantilevered portion terminating in said
3 pointed end.

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5 8. The barrier of Claim 1 where the cylindrical wall and planar disk are a single
6 piece body molded as a unitary structure and made of a rubber or plastic.

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8 9. A barrier used during testing of a water line including an upstream pipe and a
9 downstream pipe, each pipe having a predetermined circumferential configuration,
10 said barrier comprising

11 a single piece body molded as a unitary structure including

12 an upstream wall section having an internal circumferential
13 configuration substantially the same as the circumferential configuration of the
14 upstream pipe and sized to receive the upstream pipe,

15 a downstream wall section having an internal circumferential
16 configuration substantially the same as the circumferential configuration of the
17 downstream pipe and sized to receive the downstream pipe,

18 a selectively removable disk disposed between the upstream wall
19 section and the downstream wall section to block the flow of water between
20 the wall sections,

21 said planar disk having attached thereto a piercing assembly including

22 a piercing member having a pointed end, said piercing member
23 mounted to planar disk to be pulled towards the planar disk to pierce
24 said planar disk, and

25 a pull line connected to the piercing assembly to enable a user
26 while the barrier is installed in a water line to pull the piercing member
27 towards the planar disk and pierce said planar disk.

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29 10. The barrier of Claim 9 where the planar disk includes a score line.

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31 11. The barrier of Claim 10 where the pointed end of the piercing member resides
32 along the score line.

1 12. The barrier of Claim 10 where the score line emanates helically from a
2 position proximate the geometric center of the planar disk.

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4 13. The barrier of Claim 10 where the score line substantially traverses the
5 circumference of the disk.

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7 14. The barrier of Claim 10 where the piercing member is on one side of the
8 planar disk and a pull member is on the other side of the planar disk, said pull line
9 being connected to the pull member.

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11 15. The barrier of Claim 14 where the piercing member has a flat portion residing
12 on said one side of the planar disk and a cantilevered portion terminating in said
13 pointed end.

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15 16. A barrier used during testing of a water line including an upstream pipe and a
16 downstream pipe, each pipe having a predetermined circumferential configuration,
17 said barrier comprising

18 a body including

19 an upstream wall section having an internal circumferential
20 configuration substantially the same as the circumferential configuration of the
21 upstream pipe and sized to receive the upstream pipe,

22 a downstream wall section having an internal circumferential
23 configuration substantially the same as the circumferential configuration of the
24 downstream pipe and sized to receive the downstream pipe,

25 a selectively removable disk disposed between the upstream wall
26 section and the downstream wall section to block the flow of water between
27 the wall sections,

28 said planar disk including a score line and having attached thereto a
29 piercing assembly including

30 a piercing member having a pointed end residing along the
31 score line and mounted on one side to planar disk to be pulled towards
32 the planar disk to pierce said planar disk,

33 a pull member is on the other side of the planar disk, and

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1 a pull line connected to the pull member to enable a user while
2 the barrier is installed in a water line to pull the piercing member
3 towards the planar disk and pierce said planar disk.
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5 17. The barrier of Claim 16 where the score line emanates helically from a
6 position proximate the geometric center of the planar disk.
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8 18. The barrier of Claim 16 where the score line substantially traverses the
9 circumference of the disk.
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11 19. The barrier of Claim 16 where the piercing member has a flat portion residing
12 on said one side of the planar disk and a cantilevered portion terminating in said
13 pointed end.
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15 20. A water line comprising
16 an upstream pipe and a downstream pipe connected together by a single
17 piece body test barrier molded as a unitary structure, each pipe having a
18 predetermined circumferential configuration, said barrier comprising
19 a single piece body molded as a unitary structure including
20 an upstream wall section having an internal circumferential
21 configuration substantially the same as the circumferential configuration of the
22 upstream pipe and the upstream pipe received therein,
23 a downstream wall section having an internal circumferential
24 configuration substantially the same as the circumferential configuration of the
25 downstream pipe and the downstream pipe received therein,
26 a selectively removable disk disposed between the upstream wall
27 section and the downstream wall section to block the flow of water between
28 the wall sections,
29 said planar disk having attached thereto a piercing assembly including
30 a piercing member having a pointed end, said piercing member
31 mounted to planar disk to be pulled towards the planar disk to pierce
32 said planar disk, and
33 a pull line connected to the piercing assembly to enable a user

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while the barrier is installed in a water line to pull the piercing member

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towards the planar disk and pierce said planar disk.